

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Amended) A two-stroke engine fuel composition, comprising:  
combustible hydrocarbonaceous liquid fuel;  
lubricant comprising an oil of lubricating viscosity;  
a detergent comprising an alkaline earth metal-containing compound; and a molybdenum source.
2. (Previously Presented) The fuel composition of claim 1, wherein the alkaline earth metal-containing compound comprises a salt selected from the group consisting of calcium sulphonate, calcium phenate, magnesium sulphonate, and magnesium phenate, or combinations and mixtures thereof.
3. (Previously Presented) The fuel composition of claim 1, wherein the detergent comprises a detergent selected from the group consisting of neutral calcium sulphonate detergents and neutral calcium phenate detergents, or combinations and mixtures thereof.
4. (Previously Presented) The fuel composition of claim 1, wherein the molybdenum source is selected from the group consisting of molybdenum trioxide, molybdenum sulfonates, molybdenum phenates, molybdenum salicylates, molybdenum carboxylates, mono-nuclear and di-nuclear and tri-nuclear molybdenum dithiocarbamates, neutral and overbased molybdenum salicylates, overbased molybdenum phenates, overbased molybdenum sulfonates, ammonium molybdate, sodium molybdate and potassium molybdate, and molybdenum halides, compounds derived from molybdenum reacted with amines and alcohols, and combinations and mixtures thereof.

5. (Previously Presented) The fuel composition of claim 1, wherein the molybdenum source comprises an organomolybdenum complex prepared by reacting fatty oil, diethanolamine, and a molybdenum source.

6. (Previously Presented) The fuel composition of claim 1, wherein the liquid fuel is selected from the group consisting of diesel fuel, biodiesel fuel, biodiesel-derived fuel, synthetic diesel, jet fuel, alcohols, ethers, kerosene, Fischer-Tropsch fuels, liquid petroleum gas, fuels derived from coal, genetically engineered biofuels and crops and extracts therefrom, unleaded motor gasolines, reformulated gasolines which contain both hydrocarbons of the gasoline boiling range and fuel-soluble oxygenated blending agents, gasoline, bunker fuel, and mixtures thereof, and emulsions, suspensions, and dispersions thereof in water, alcohol, and other carrier fluids.

7. (Previously Presented) The fuel composition of claim 1, comprising about 95 to about 99 wt. % combustible hydrocarbonaceous liquid fuel, about 1 to about 5 wt. % lubricant comprising an oil of lubricating viscosity, about 0.001 to about 0.05 wt. % alkaline earth metal-containing compound, and about 1 ppm to about 10 ppm Mo from the molybdenum source.

8. (Previously Presented) A method for controlling the deleterious effect on exhaust emissions after-treatment and control devices of at least one metal contaminant and compounds thereof in an exhaust stream from the combustion of a combustible fuel composition in a combustion system of a two-stroke engine, said method comprising the steps of:

(a) intaking a fuel composition into a combustion system of a two-stroke engine, wherein the fuel composition comprises

- i) combustible hydrocarbonaceous liquid fuel,
- ii) lubricant comprising an oil of lubricating viscosity,
- iii) a detergent comprising an alkaline earth metal-containing compound, and
- iv) a molybdenum source;

(b) combusting in the combustion system the hydrocarbonaceous fuel to produce combustion products comprising at least one material selected from the group consisting of alkaline earth metal and compounds thereof;

(c) contacting the molybdenum with at least one of the alkaline earth metal, and compounds thereof, in the combustion products,

(d) flowing the combustion products over at least one of a catalyst, a sensor, and an on-board diagnostic device, or a combination of these;

wherein the molybdenum interacts with at least one of the alkaline earth metal or compounds thereof effective to increase detergency, as compared to conducting the same method without including the molybdenum source in the fuel composition, and without blocking at least one of the catalyst, sensor and on-board diagnostic device.

9. (Previously Presented) The method of claim 8, wherein the fuel composition is a composition according to claim 2.

10. (Previously Presented) The method of claim 8, wherein the alkaline earth metal comprises calcium, and the alkaline earth metal compound in reduced level is calcium sulphate.

11. (Previously Presented) The method of claim 8, wherein the alkaline earth metal and compounds thereof in the combustion products originate from the detergent contained in the fuel composition.

12. (Previously Presented) The method of claim 8, wherein the combustion system further comprises flowing the combustion products through an after-treatment system.

13. (Previously Presented) The method of claim 12, wherein the combustion system further comprises flowing the combustion products through an after-treatment system, wherein the after-treatment system is selected from the group consisting of a

catalyzed diesel particulate filter and a continuously regenerating technology diesel particulate filter.

14. (Currently Amended) An apparatus for performing the method of claim 8, said apparatus comprising:

- (a) a two-stroke engine including a combustion chamber adapted to combust a fuel composition;
  - (b) a means to introduce the fuel composition into the combustion chamber;
  - (c) means to initiate combustion of the fuel composition in the combustion chamber;
  - (d) a means to convey combustion products from the combustion chamber;
- and
- (e) means to reduce the amount of at least one pollutant from the combustion product, and
  - (f) a storage means containing a fuel composition according to claim 1.

15. (Cancelled).

16. (Previously Presented) The apparatus of claim 14, wherein the means (e) comprises an after treatment system selected from the group consisting of a diesel oxidation catalyst, a catalyzed diesel particulate matter filter, and continuously regenerating technology diesel particulate filter.

17. (Previously Presented) The apparatus of claim 14, wherein the apparatus is selected from the group consisting of a motorcycle, a moped, a snowmobile, an all terrain vehicle, tractor, mining equipment, construction equipment, a marine outboard motor, a lawn mower, a chain saw, a pump, an electrical generator, a garden tiller, a landscaping hedge trimmer, and a back pack blower.

18. (Previously Presented) The apparatus of claim 14, wherein the apparatus is selected from the group consisting of a gasoline engine and diesel engine.

19. (Previously Presented) A method for improving the durability of an after-treatment device for a two-stroke engine combustion system, said method comprising combusting a fuel composition containing hydrocarbonaceous fuel, oil of lubricating viscosity, alkaline earth metal-containing detergent compound, and a molybdenum source in a combustion chamber to form combustion products, and contacting the after-treatment device with the combustion products, wherein the molybdenum source is in an amount sufficient for the molybdenum to interact with one or more contaminants comprising an alkaline earth metal or alkaline earth metal compounds thereof in said fuel composition and combustion products thereof effective to thereby increase detergency without increasing the amount of alkaline earth metal compound contaminants contacting the after-treatment device.

20. (Previously Presented) The method according to claim 19 wherein the fuel composition is a composition according to claim 2.